

What is claimed is:

1. A rod-type solid-state laser apparatus comprising:

a rod-type solid-state laser medium;

5 a pair of fixing rings, each placed around an end of the solid-state laser medium and having an inner diameter approximately equal to the diameter of the solid-state laser medium, and formed with part or all of its outer face tapered;

10 a pair of rod holders, each placed around one of the fixing rings and having a tapered inner face facing the fixing ring and tapered at an angle approximately equal to the tapered outer face of the fixing ring; and

15 a pair of pressing members each for pressing one of the fixing rings to one of the rod holders on its tapered inner face and also to the solid-state laser medium, and for fixing the solid-state laser medium to the rod holder.

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2. A rod-type solid-state laser apparatus comprising:

a rod-type solid-state laser medium;

20 a pair of fixing rings, each placed around an end of the solid-state laser medium and having an inner diameter being approximately equal to the diameter of the solid-state laser medium, and composed of material having a Young's modulus greater than or equal to 300 MPa and less than the Young's modulus of the solid-state laser medium;

25 a pair of rod holders each placed around one of the fixing rings and each having a tapered inner face; and

a pair of pressing members each for pressing one of the fixing rings

to the tapered inner face of one of the rod holders and also to the solid-state laser medium, and for fixing the solid-state laser medium to the rod holder.

3. A rod-type solid-state laser apparatus comprising:

5           a rod-type solid-state laser medium;

          a pair of fixing rings, each placed around an end of the solid-state laser medium and having an inner diameter being approximately equal to the diameter of the solid-state laser medium, and formed with a cylindrically shaped face facing the solid-state laser medium;

10          a pair of rod holders each placed around one of the fixing rings and each having a tapered inner face; and

          a pair of pressing members each for pressing one of the fixing rings to the tapered inner face of one of the rod holders and also to the solid-state laser medium, and for fixing the solid-state laser medium to the rod holder.

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4. The rod-type solid-state laser apparatus according to any one of claims 1 to 3, wherein:

          the rod holder is provided with a space for setting an O-ring; and

          the O-ring being set in the space is used to seal out coolant medium

20          that cools the solid-state laser medium.

5. The rod-type solid-state laser apparatus according to claim 1, wherein the fixing ring is made of material having a Young's modulus greater than or equal to 300 MPa, and less than the Young's modulus of the solid-state

25          laser medium.

6. The rod-type solid-state laser apparatus according to any one of claims 1, 2, or 5, wherein a face of the fixing ring, which faces the solid-state laser medium, has a cylindrical shape.

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7. The rod-type solid-state laser apparatus according to any one of claims 1 to 3, wherein the fixing ring material is a fluorinated resin.

8. The rod-type solid-state laser apparatus according to any one of claims 1 to 3, wherein the solid-state laser medium is pumped by a semiconductor laser beam.

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